(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/041333 A1

(51) International Patent Classification[7]: H01M 8/02, 8/04, 8/06

(21) International Application Number: PCT/IB2004/003365

(22) International Filing Date: 14 October 2004 (14.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-364524 24 October 2003 (24.10.2003) JP

(71) Applicant *(for all designated States except US)*: **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **FUJITA, Nobuo** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP).

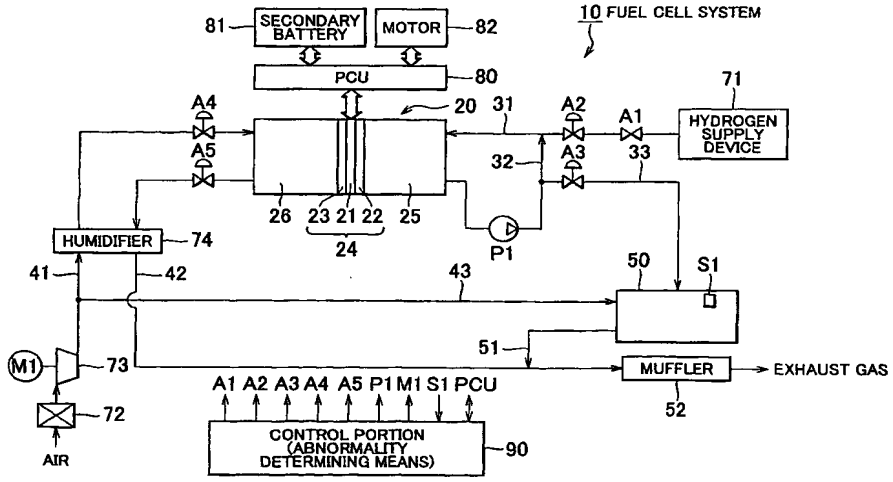
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ABNORMALITY DETECTING DEVICE OF FUEL CELL SYSTEM




(57) Abstract: An abnormality detecting device of a fuel cell system according to the invention includes a hydrogen off-gas circulation passage (32) for making hydrogen off-gas discharged from a fuel cell (20) flow back to an anode (22); a discharge passage (33) for discharging part of the hydrogen off-gas, which is circulated through the hydrogen off-gas circulation passage (32), from the hydrogen off-gas circulation passage (32); a hydrogen discharge valve (A3) provided in the discharge passage (33); abnormality determining means (90) for determining whether an abnormality has occurred in opening/closing of the hydrogen discharge valve (A3): and gas state quantity detecting means (S 1) for detecting a gas state quantity of the hydrogen off-gas, the gas state quantity detecting means (S 1) being provided in the discharge passage (33) at a position downstream from the hydrogen discharge valve (A3). The abnormality determining means (90) determines whether an abnormality has occurred in opening/closing of the hydrogen discharge valve (A3) based on the gas state quantity of the hydrogen off-gas.

WO 2005/041333 A1